NOTE XII.

ON CERTAIN TORTOISES IN THE COLLECTIONS OF THE LEYDEN MUSEUM.

BY

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Günther's splendid monograph on the gigantic landtortoises, which appeared a few years ago, induced me to compare the specimens belonging to this group, which form part of the Leyden collections. Among these is the original specimen of *Testudo indica vosmaeri* Schoepff as it was first described and figured by this author in 1792 in his Historia Testudinorum (page 103, Pl. 22). Fitzinger, Duméril & Bibron, and others have since introduced this species into science under the name of *Testudo vosmaeri*, without however being able to decide anything with certainty as to the locality where the species was to be sought for. Other authors such as Schlegel and Gray united all the gigantic landtortoises into one species to which the name of *Testudo indica* was applied: for them *T. vosmaeri* was a mere synonym.

Günther was the first to clear up the confusion with the aid of extensive material collected both in the Indian ocean and on the Galapagos islands. He succeeded in definitely settling that *T. vosmaeri* was a distinct species, which in former centuries had inhabited the island of Rodriguez, where however it had become exterminated in the beginning of this century. The species never occured any-where else but in this isolated spot, and the only remnants of it which, according to Günther, are preserved for posterity are two carapaces in the Paris Museum (from which Duméril & Bibron took their description after having identified them with Schoepff's figure) and five partially mutilated carapaces, together with numerous parts of the endoskeleton of a great number of individuals, now forming part of the collections in the British Museum, which have been collected by the naturalist of the Expedition for the observation of the Transit of Venus, stationed in 1876 on Rodriguez.

Günther incidentally mentions Schoepff's specimen which in the former century formed part of the collections of the Prince of Orange, stadtholder of the United Republic, which at that time were under the care of A. Vosmaer who gave a description of the specimen to Schoepff, adding that it had come from the Cape of good Hope. Günther rightly concludes that this specimen must have reached Europe at the time when the species was not yet extinct but does not mention where this type specimen may be looked for, apparently not being aware of the fact that Schlegel in the „Reptiles" of the »Fauna Japonica" (p. 74) draws attention to the very specimen, which together with numerous other objects had passed from the stadtholders' collections into those of the Leyden Museum.

There can be no doubt that this specimen is really the one from which Vosmaer's description and Schoepff's figure were taken. Not only do the measures correspond (length of the carapace in straight line 81 cm.; the same over the curve 93 cm.; width of the same over curve $88^1/_2$ cm.; length of the sternum 58 cm.); but the figure is a direct copy from the original, as is still more conclusively shown by the particular circumstance of the remnants of the sacral vertebrae, which were not entirely removed when the carapace was first prepared, being exactly reproduced in Schoepff's figure, such as they are there now.

The carapace is larger than either the Paris or the London ones and extremely well preserved, never having been exposed to the deteriorating influence of climate as has been the case with the carapaces brought home by the Transit- of- Venus-expedition. The concentric striae on the scutes are very distinct, especially towards their margins; the anterior and posterior margins of the shell are somewhat upturned, though perhaps not quite so strongly as might be concluded from Schoepff's figure. The sternum is concave and so the carapace has in all probability belonged to a male individual. That it came from the Cape must be explained for in the same way as must so often be done for the other gigantic Testudinata, viz. that it had first been imported into that country from its original habitat Rodriguez, without any special importance having been attached to this latter fact.

The other gigantic landtortoises are very scantily represented in the Leyden Museum, which is deficient in all the species from the Galapagos islands.

There are four specimens of *Testudo elephantina*, one stuffed carapace, and three other carapaces with complete skeletons. Their respective sizes are

	A	B	C	D
Length over curve	85	64½	79½	57½
Width » »	82	64½	81	60
Length of sternum	52	43	49	38

I have moreover compared the skeletons with Günther's detailed description, with which they correspond in every respect.

Finally our spirit collections contain a young specimen, which will have to be referred to *Testudo gigantea D. & B.*, a species not personally examined by Günther and having a general resemblance to *Testudo elephantina*, from which it is however disiinguished by the caudal plate being divided in the middle.

After the Paris specimen this would be the second on record. The division of the caudal plate is too regular to be looked upon as purely accidental.

The locality from whence the specimen was brought is sharply fixed. Dussumier himself on his travels in the tropics collected it in the island of Aldabra (N.W. of Madagascar) the chief dwelling place of the closely allied *Testudo elephantina.*

A careful investigation of the tortoises still inhabiting this group of small islands is however necessary definitely to settle the question whether really two distinct species of gigantic tortoises inhabit it or whether *T. elephantina* and *gigantea* are merely varieties of the same species. The young specimen in the Leyden Museum does not suffice to make out whether any other corresponding difference either in the endo- or exoskeleton really justifies us in looking upon the two specimens of *T. gigantea*, which are as yet on record, as specifically different from *Testudo elephantina*, both having in that case developed into distinct species by the fact of their being possibly isolated on two different islands of the Aldabra group.

The following enumeration of oriental Emydae, represented in the collections of the Leyden Museum, may here be inserted because several authors still appear to retain doubts as to the specific independance ot some of them, whereas at the same time the localities from whence they were brought may be worth recording. One of them was noticed and figured by Giebel, who however failed to recognize it as a distinct species, uniting it with *Clemmys dentata.* It is here described under the name of that naturalist.

Cyclemys oldhami.

One adult stuffed specimen from Burma.

Cyclemys dhor.

Five adult stuffed specimens, four of them from Java, one from the Malayan Peninsula; one young and two very young specimens from Java in spirits, another very young one in spirits from Sumatra. In the latter island *C. dhor* appears to be much less numerous than *C. ovata.*

Cyclemys ovata.

Two adult specimens from W. Sumatra, stuffed; one nearly adult, one very young and four young specimens in spirits from the same locality. Gray was the first to distinguish this species from the foregoing. In addition to the characteristics mentioned by him (Suppl. to the catal. of shield reptiles p. 28, 29), it may generally be distinguished from *C. dhor* by the black radiating lines on the sternal plates being much broader and more conspicuous. Moreover the anterior borders of the two anal plates meet in the median line of the sternum under an angle which is much less acute than that which they form in *C. dhor.* In numerous specimens of *C. ovata* these anterior borders even merge into each other by a very gentle curve.

Gray's specimens were from Borneo.

Appended to *C. ovata* Gray mentions the tortoise from Banka described by Giebel (Zeitschr. f. d. ges. Naturwissensch. 1866, p. 15) under the name of *Cl. dentata* as requiring further elucidation.

As the Leyden Museum possesses a specimen which was brought from Borneo by Schwaner in 1844 and which exactly corresponds to Giebel's description I may here be allowed to redescribe the species under the name of

Cyclemys giebelii n. sp.

Shell rather depressed, serrated both anteriorly and posteriorly, the posterior serrature being very strong, as in young specimens of *C. dhor.* A continuons ridge along the median line of the back, the sides of the shell sloping downwards very evenly on both sides of the ridge, which has not the appearance of a raised keel. Nuchal plate rather large, triangular, broadly truncated in front. Marginal plates twelve on each side. There are *seven* vertebral plates; the fifth and sixth smallest and regularly trapezoidal, broader than long. The areola of each of the costal plates has a distinct brown spot; of the vertebral plates the four anterior ones have each a pair of similar brown spots just before the posterior border of the scale, one on each side of the vertebral ridge.

Paralel longitudinal yellow lines on the neck; a much broader longitudinal yellow patch commences above the eye and runs along the margin of the upper surface of the head. The front margin of the gular plates more or less denticulated having three prominences on each side. Length of the carapace over the curve $7^1/_2$ cm.

Habit. Borneo.

The four specimens of this species, which Giebel received from Banka, were all characterized by one or more supernumerary vertebral shields, but some of them were remarkably assymetrical. Our specimen is very symmetrically built and best corresponds with Giebel's upper figure, only the caudal plates are less prominent and more correspondent in shape with the adjacent marginals.

Geoemyda spinosa.

One adult stuffed specimen from Poeloe Tello on the Batou islands, W. of Sumatra; another adult in spirits from W. Sumatra.

Geoemyda depressa.

This species which was first described by Anderson from Arracan (Ann. & Mag. of Nat. Hist. 1875; vol. XVI. p. 384) appears to inhabit Sumatra as well. So at least would I conclude from an adult stuffed example preserved in the Leyden Museum which, as far as Anderson's diagnosis goes, appears to be identical with his species. The second, third and fourth vertebral offer a nearly flat surface, each of them being about twice as broad as long. The length of the shell over the curve is 22.5 cm. The claws are stronger than in *G. spinosa.*

The specimen was captured in a river in the hilly district near Padang by S. Müller and has been confounded in our collections with specimens of *Notochelys platynota.*

Batagur borneensis.

As might be presumed from the remarks made upon this species by its authors, Schlegel and Müller, when they described it (Verhandelingen over de Nat. Gesch.; Schildpadden, p. 30) under the name of *Emys borneoensis* and found close relationship to *Tetraonyx longicollis*, this species is a true *Batagur.* The closer specific affinities however lead more towards the *dhongoka*, than they do towards the *baska.*

Still it appears that the Bornean specimens really belong to a distinct species, differing in certain constant characters from the Indian Batagurs. For this reason the following redescription may not prove superfluous.

Form of the shell rather convex, its hind edge slightly serrated in young specimens, the serrature becoming nearly obsolete with age. A continuous keel along the middle of the vertebrals in young specimens, which is reduced to knobs on the posterior half of the vertebrals in old ones. Sternum flat with very distinct lateral keels in young specimens. Nuchal plate triangular, broadest behind. The first, second and third vertebrals broader than long in young, but longer than broad in old individuals. *Gulars considerably broader than long, the suture between them being about one third of the length of the suture between the postgulars.* The hind margins of the postgulars form an obtuse angle in young and a faint curve in old examples. In an adult example the postgulars are shorter than either the pectorals, abdominals or praeanals, the sternum is of a more or less uniform yellow, on the back there are three broad longitudinal dark bands, whereas the marginals are provided with a black blotch near the anterior margin and situated partly on the superior, partly on the inferior surface of the animal.

In a young specimen the black bands on the back are much less distinct, whereas each of the sternal plates carries a large dark blotch closer to the posterior than to the anterior margin, each of these blotches being surrounded by a thin blackish line.

The Leyden Museum is at present in possession of two specimens of this species, one adult, the carapace of which measures 30.5 cm. over the curve, one young individual of about 12 cm.

Emys subtrijuga.

Synon. Geoclemys macrocephala, Gray, P. Z. S. 1849, p. 478. pl. 21; 1861, p. 139; 1869, p. 194.
Damonia macrocephala, Gray, Suppl. to the Cat. of Sh. Rept. 1870.
Emys macrocephala, Günther, Rept. of Br. India. p. 31.

With respect to this species considerable confusion has persisted up to the present day, which by the following lines I hope to be able to clear away.

The three original specimens on which it was founded and which are now before me, were captured in Java by Kuhl & v. Hasselt, most probably in the most western province of Bantam. They reached the Leyden Museum, were examined by Boie, who in his MS. list of the Malayan reptiles identified them with *Emys trijuga* Schweigger, from the continent of India. In 1835 Schlegel gave a short description of the specimens in the Fauna Japonica (Reptilia, p. 64) in which all the most salient characters: the large head, the yellow bordering of the shell and the curious distribution of colours on the sides of the head are distinctly enumerated. However he fell into Boie's error by bringing the specimens to Schweigger's *E. trijuga.* This error was corrected in the: Verhandelingen over de Natuurlijke Geschiedenis der Nederlandsche Overzeesche bezittingen, Leiden 1839—1844, on p. 30 of the part Reptilia, published by Sal. Müller and himself. Here the name *E. subtrijuga* was first given to the three Javan specimens, the large size of the head was again noticed and for a fuller description reference was given to the Fauna japonica. Since then specimens of this species have never reached Leyden nor was the province of Bantam in the same time ever reexplored.

On the other hand the species was found to inhabit Siam, two specimens being sent from thence by M. Mouhot to the British Museum where they were described by Gray (who failed to detect their identity with Schlegel and Müller's *Emys subtrijuga*) under the name of *Geoclemys macrocephala.* Both his description and figure (Proc. Zool. Soc. 1859) agree, even in minute detail, with the three original specimens from Java and with their description in the Fauna Japonica. Other specimens were afterwards noticed from Cambodja (P.Z.S. 1861) and in 1869 *Geoclemys macrocephala* was placed by Gray in his genus *Damonia.* In the Supplement to the Catalogue of Shield-reptiles, published in 1870, it again appears under this name and amongst the synonymy a specimen is mentioned which was received from the Utrecht Museum as *E. trijuga.*

The latter is perhaps the same specimen which Günther mentions on p. 30 of his Reptiles of British India as having come from Holland under the name of *E. subtrijuga.* Günther remarked that this latter specimen was specifically distinct from *E. trijuga* but failed to recognize its identity with *E. macrocephala* with which Gray in 1870 united what appears to have been the same specimen. Leaving it at present undecided whether this was really an *E. subtrijuga Schl. & M.* — the type specimens being all preserved in Leyden it could not have been one of these — it appears to have rather augmented the confusion than otherwise. Still after the above recapitulation and the comparison of the three typical examples doubts can no longer be entertained as to the identity of *Emys subtrijuga Schl. & M.* with *Geoclemys (Damonia) macrocephala Gray.* It is certainly curious that the distribution should be such as to make an animal from Siam reappear in Java, being apparently absent in the intervening countries, but it must be remenbered that this is the case with other animals both amongst birds and mammals as well.

Strauch in his zoogeographical monograph »die Vertheilung der Schildkröten über den Erdball", Petersburg 1865, briefly notices Gray's *Geoclemys macrocephala* as coming from Siam and Cambodja (p. 66) but was not aware of the identity with *E. subtrijuga* above referred to, nor did he notice that *E. subtrijuga Schlegel & Müller*, which was not circumstantially characterized when the species was first introduced under this name in the »Verhandelingen etc.", had formerly been described more elaborately in the Fauna Japonica.